

UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

WHIRLPOOL CORPORATION and
WHIRLPOOL PATENTS COMPANY,

Plaintiffs and Counterdefendants,

File No. 1:04-CV-100

v.

HON. ROBERT HOLMES BELL

LG ELECTRONICS, INC.,

Defendant and Counterplaintiff,

LG ELECTRONICS, U.S.A., INC.,

Defendant, and

GENERAL ELECTRIC COMPANY,

Defendant and Counterplaintiff.

OPINION

Plaintiffs Whirlpool Corporation and Whirlpool Patents Company (collectively "Whirlpool") filed this action against Defendants LG Electronics, Inc. and LG Electronics U.S.A., Inc. (collectively "LG"), and General Electric Company ("GE"), seeking injunctive relief and damages for patent infringement. Whirlpool is the owner of U.S. Patent No. 6,212,722 entitled "Apparatus and Method for Rolling Clothes in an Automatic Washer" (the '722 patent"), and U.S. Patent No. 4,784,666 entitled "High Performance Washing Process for Vertical Axis Automatic Washer" ("the '666 patent"). Whirlpool contends that the GE

Profile Harmony Model No. WPGT9350 ("Harmony I") and the GE Profile Harmony Model No. WPGT9360 ("Harmony II") manufactured by LG and sold by GE infringe on Whirlpool's '722 and '666 patents. GE and LG have counterclaimed for a judgment of non-infringement and invalidity of the patents.

This matter is currently before the Court on Defendants' motions for summary judgment of non-infringement and invalidity of the '666 patent. The parties have stipulated that for the purposes of resolving the infringement issues in this lawsuit, the Harmony I and the Harmony II are the same, such that evidence presented with regard to the structure and operation of the Harmony I will apply equally to the structure and operation of the Harmony II, and that any determination of infringement or non-infringement with regard to the Harmony I will apply equally to the Harmony II. (Docket # 330). The Court will accordingly refer to both washers as the "Harmony."

I.

One who, without authorization, makes, uses, offers to sell, or sells any patented invention within the United States, or imports into the United States any patented invention during the term of that patent, or actively induces patent infringement, is liable for patent infringement. 35 U.S.C. §§ 271(a) & (b).

An infringement analysis requires two steps: claim construction to determine the scope and meaning of the claims asserted to be infringed, and a comparison of the properly construed claims to the allegedly infringing device. *Markman v. Westview Instruments, Inc.*

52 F.3d 967, 976 (Fed. Cir. 1995). This Court has already conducted the first step in its opinion and order on claim construction dated November 8, 2005. (Docket #'s 254 & 255).

The second step of determining whether an accused device infringes a claim, is a question of fact. *Schoell v. Regal Marine Industries, Inc.*, 247 F.3d 1202, 1207 (Fed. Cir. 2001). "To establish infringement, every limitation set forth in a patent claim must be found in an accused product or process exactly or by a substantial equivalent." *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1535 (Fed. Cir. 1991). "The patentee bears the burden of proving infringement by a preponderance of the evidence." *Id.*

Summary judgment is appropriate if "the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." FED. R. CIV. P. 56(c). In reviewing a motion for summary judgment, the court views the evidence in a light most favorable to the non-movant, and draws all reasonable inferences in its favor. *Schoell v. Regal Marine Industries, Inc.*, 247 F.3d 1202, 1207 (Fed. Cir. 2001) (citing *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255 (1986); *SRI Int'l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1116 (Fed. Cir. 1985) (en banc)).

Summary judgment is appropriate with respect to an infringement claim "when it is apparent that only one conclusion as to infringement could be reached by a reasonable jury," or when "the patent owner's proof is deficient in meeting an essential part of the legal standard for infringement, since such failure will render all other facts immaterial." *Telemac*

Cellular Corp. v. Topp Telecom, Inc., 247 F.3d 1316, 1323 (Fed. Cir. 2001) (citations omitted).

II.

Whirlpool has alleged that the Harmony infringes Claims 13 and 14 of the '666 patent.

Claim 13 is a method claim comprising three steps:

A method of laundering a textile wash load in a washing apparatus having a rotatable wash zone including a peripheral wall, means for rotating said peripheral wall and said wash load in said wash zone about a generally vertical axis, and **means for providing agitation** to said wash load within said wash zone, comprising the steps of:

- (1) introducing said wash load into said wash zone;
- (2) **passing an amount of detergent solution through said wash load in excess of that necessary to saturate the wash load without mechanically agitating said wash load;**
- (3) thereafter rinsing said detergent solution from said wash load.

'666 patent, Claim 13 (emphasis added).

Claim 14 is a method claim comprising one step:

A method of laundering textile wash load as recited in claim 13 wherein said wash load is agitated for a time within said wash zone during said rinsing.

'666 patent, Claim 14.

Defendants contend that the Harmony does not infringe Claim 13 or 14 of the '666 patent because the Harmony does not contain all the limitations of step 2 of Claim 13.

This Court has construed the relevant terms of Claim 13 as follows: (1) the corresponding structure for the "means for providing agitation" is "a device that moves cloth items to and fro"; (2) the term "passing . . . through said wash load" means "passing

[detergent solution] through the wash load, not merely over or around"; (3) the term "passing an amount . . . in excess of that necessary to saturate the wash load" means "continuously passing a concentrated detergent solution so that the total amount passed through would be greater than the amount necessary to saturate the wash load; and (4) the term "without mechanically agitating said wash load" means "without using a means for providing agitation to agitate the wash load." Order Construing Terms at 2-3.

Whirlpool has moved for reconsideration of certain aspects of this Court's decision regarding the term "without mechanically agitating said wash load." Claim construction is subject to revision and the court may revisit and alter its claim construction as its understanding of the claimed technology evolves. *Jack Guttman, Inc. v. Kopykake Enterprises, Inc.*, 302 F.3d 1352, 1361 (Fed. Cir. 2002) ("District courts may engage in a rolling claim construction, in which the court revisits and alters its interpretation of the claim terms as its understanding of the technology evolves."). *See also Utah Med. Prod., Inc. v. Graphic Controls Corp.*, 350 F.3d 1376, 1381-82 (Fed. Cir. 2003) (finding no error where district court clarified its original construction to more closely align its interpretation with claim language and specification's description of the function).

The Court construed the term "without mechanically agitating" to mean "without using a means for providing agitation to agitate the wash load." Order Construing Terms at 3. In its motion for reconsideration Whirlpool does not challenge the Court's construction of the term itself, but instead challenges this Court's rejection of Whirlpool's assertion that

reversing direction during the spin wash does not constitute "mechanical agitation" within the meaning of Claim 13. *See* Opinion at 33. This Court observed that Whirlpool had acknowledged in the specifications and in the prosecution history that there are a number of means of agitating clothes, including the use of agitators, tumbling, and reversing the direction of rotation of the wash tub. According to Whirlpool, the Court committed palpable error by including "tumbling" and "reversals" as forms of mechanical agitation for the vertical axis washing machine required by Claims 13 and 14 of the '666 patent. Whirlpool contends that the Court failed to appreciate that the prosecution history statement was made in the context of horizontal or angled axis machines, not the vertical axis machines which are the subject of the '666 patent.

This Court was fully aware that the prior art in Spindel and Marshall involved horizontal and angled axis machines rather than vertical axis machines. Nevertheless, in the specifications the '666 patent refers to agitation as the movement of clothes relative to each other. Opinion at 32-33. Tumbling and reversals, to the extent they move clothes relative to each other, are sufficient to constitute agitation. Gravitational and liquid forces can work to move clothes relative to each other in a vertical axis machine, just as they can in a horizontal or angled axis machine. They may not do it to the same degree, but they can cause agitation to occur. The Court accordingly reaffirms its original rejection of Whirlpool's contention that reversing direction during the spin wash does not constitute "mechanical agitation" within the meaning of Claim 13.

In their briefs both Whirlpool and Defendants suggest that this Court has already concluded that reversing direction necessarily constitutes agitation. (Reply Br. at 1). (Opp. Br. at 6). Both parties have overstated this Court's construction of the term "mechanical agitation." This Court rejected the assertion that reversing direction cannot constitute mechanical agitation in a vertical axis machine. However, this Court has never held that reversing direction, without more, is necessarily sufficient to constitute agitation.

In response to Defendants' motion for summary judgment of infringement, Whirlpool now requests that this Court revisit its Order construing terms and construe "without mechanically agitating" as "without using the agitation means to agitate the wash load," or alternatively, "without using a means for providing agitation in a vertical axis washer to agitate the wash load." (Pl. Br. in Opp. at 12). Whirlpool's request to revise the construction of the term is denied. The Court is not convinced that its original construction of the term was erroneous or that any further construction is required.

III.

The accused device, the Harmony, is an impeller machine that washes clothes primarily through an impeller wash cycle, where the impeller moves back and forth in a basket of clothes and wash liquid. The Harmony also includes a Centrifusion wash, also known as the spin wash or compression wash cycle. The Centrifusion wash is the focus of the infringement analysis.

Whirlpool has alleged that the Harmony's Centrifusion wash infringes Claims 13 and 14 of the '666 patent. Defendants respond that the Centrifusion wash does not infringe these claims because it does not meet all of the limitations of step 2 of Claim 13. Specifically, Defendants contend that the Harmony does not meet the requirements that the detergent solution pass through the clothes continuously, in excess of saturation, and without agitation because the Centrifusion wash (1) provides periods of mechanical agitation, (2) prevents wash liquid from continuously passing through unagitated clothes, (3) rotates the washer basket at low spin speeds, and (4) employs visually observable free liquid in the basket.

Whirlpool contends that there are issues of fact as to items 1 and 2. As to items 3 and 4, Whirlpool contends that because neither high spin speed nor low water level is recited as a limitation of the asserted claims, they are irrelevant and should not be considered for purposes of the infringement analysis. In support of this assertion Whirlpool recites the axiom that it is improper to read a limitation from the specification or a preferred embodiment into the claims, *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 904 & 913 (Fed. Cir. 2004).

Whirlpool's argument that spin speed and water level are irrelevant oversimplifies *Liebel-Flarsheim* and the role of the recited axiom in claim construction. As noted in *Liebel-Flarsheim*, there are twin axioms that frequently come into play during claim construction:

On the one hand, claims "must be read in view of the specification, of which they are a part." On the other hand, it is improper to read a limitation from the specification into the claims. Although parties frequently cite one or the other of these axioms to us as if the axiom were sufficient, standing alone, to resolve

the claim construction issues we are called upon to decide, the axioms themselves seldom provide an answer, but instead merely frame the question to be resolved. We have recognized that "there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification."

Id. at 904 (citations omitted).

While Claim 13 does not recite either high spin speed or low water volume, both of these factors are clearly relevant to the construction of the limitations of "without agitation" and continuously passing detergent solution directly through the cloth items.

There is no dispute between the parties on the basic operation of the Centrifusion wash. During the Centrifusion wash the impeller is locked together with the wash basket and spun to create a strong flow of water under centrifugal force. As the basket spins faster, centrifugal force pulls the cleaning solution through the fabric. After several seconds of clockwise spinning, the basket slows down and stops. The wash water pools back into the wash basket. The basket then reverses and spins in a counterclockwise direction, creating the same cleaning action. The washer changes direction four times. (Harmony Tech. Serv. Guide at 6 & 18, Pl. Ex. 3; Harmony sales brochure at 8, Pl. Ex. 4). With each spin cycle, the motor is energized for 15 seconds to bring the basket up to a target rotational speed and then de-energized. The basket comes to a stop 30 seconds after the rotation began. The amount of time it takes to complete the four alternate rotations is approximately two minutes. (Sundell Decl. ¶ 17).

A. Without Mechanical Agitation

The Court's first consideration is whether the Harmony's Centrifusion wash meets the limitation of Step 2 of Claim 13 of passing detergent through the cloth items "without mechanical agitation." As previously noted, this Court has construed "without mechanical agitation" to mean "without using a means for providing agitation to agitate the wash load." and this Court has construed "means for providing agitation" as "a device that moves cloth items to and fro."

The Centrifusion wash passes detergent solution through the cloth items by spinning the basket. A relatively high volume of free liquid is observable in the basket during the Centrifusion wash. (Sundell Decl. ¶ 10). Whirlpool's expert, Dr. Caligiuri, stated in his report that at loads of about 8 pounds, the Harmony uses around 100 pounds of water, for water to cloth ratios that exceed 12 to 1. (Caligiuri Supp. Rpt. at 11-12). A 12 to 1 water to cloth ratio is indicative of traditional deep-filling washers. (Duncan Rpt. at 19-20; Hardaway Dep. at 169). Dr. Caligiuri's video footage of the operation of the Harmony's Centrifusion wash, which has been presented to the Court on DVD, reveals that at the beginning and end of each of the four 30-second cycles, there is substantial water in the wash tub – more water than is necessary to saturate the cloth items, and sufficient water to enable the cloth items to be suspended in the water. (Pl. Ex. 6). According to Defendants' expert, as the basket and impeller begin to spin, the detergent solution in the basket begins to take on a parabolic shape, the clothes begin to move outward, and the solution level in the annulus

risers. (Sundell Decl. ¶ 21). The fully saturated cloth items move outward and then inward during the Centrifusion Wash cycle along with the detergent solution and shift relative to one another. Sundell Decl. at ¶¶ 21-27).

Whirlpool acknowledged the relevance of water level to the presence or absence of agitation in the prosecution history. After the Patent Examiner rejected Claims 1-13 as being unpatentable over Marshall, which utilized an angled axis which permitted tumbling of the clothes during the spinning process, Whirlpool distinguished its invention from Marshall as follows:

The Marshall reference utilizes a wash tub having an angled axis which permits a tumbling of the clothes during a spinning process which is critical to the Marshall wash process. Marshall specifically desires to maintain an **annular layer of water** within the wash tub in which the clothes are carried **to assist in the mechanical agitation** achieved by Marshall through the use of slowing or stopping and sometimes reversing the direction of rotation of the wash tub to cause a tumbling and mechanical agitation of the clothes in the wash tub.

August 17, 1987, Amendment "A" at 11, LGE000236 (emphasis added). Whirlpool distinguished the invention covered by the '666 patent from Marshall by explaining that in Whirlpool's invention:

when the clothes load is initially sprayed with concentrated liquid detergent, the amount of liquid detergent solution in the wash basket at any given time is **only enough to saturate** the clothes load and **there is no excessive or free solution** in which the vanes could operate to mechanically agitate the wash load. Mechanical agitation required by Spendel and Marshall would be very difficult, if not impossible to obtain in a vertical axis washer. Their method could not be practiced in a normal home top loader.

August 17, 1987, Amendment "A" at 16, LGE000241.

In other words, Whirlpool acknowledged during the prosecution history that it was not only the effect of gravitational forces working on the clothes in the angled axis machine described in Marshall during the slowing, stopping, and reversing, but also the higher water level, that promoted the mechanical agitation of the clothes in the wash tub. Like the Marshall reference, Harmony's Centrifusion wash maintains an annular layer of water which assists in the mechanical agitation of the cloth items when the basket speeds up or slows down, and reverses direction. (Sundell Decl. ¶ 13).

In contrast to the ample water volume during the Centrifusion wash, the abstract of the '666 patent describes an amount of detergent solution "only slightly in excess of the amount required to saturate the clothes load at the given rotational speed." The summary of the invention indicates that the invention can be successfully practiced at "water to cloth ratios well below five to one." '666 patent, col. 2, ll. 15-16. The summary further recites that "[v]ery little water is required during the concentrated washing step." '666 patent, col. 2, ll. 27-29. The summary distinguishes the invention from the prior art by indicating that "uniform washability can be achieved without the need for pre-wetting the clothes load or redistributing the clothes load during the concentrated washing operation." '666 patent, col. 2, l. 66 - col. 3, l. 2. The '666 patent indicates that its novel aspects over the prior art include a concentrated spin wash where the volume of wash solution is "only slightly in excess of the amount retained by the spinning clothes load;" the use of a concentrated, low water volume

"spin wash;" and a washing process performed in "a concentrated, low water volume spin wash." '666 patent, col 3, l. 49 - col. 4, l. 5.

During the operation of the spin wash in the '666 patent there can be no mechanical agitation of the cloth items. The inventors of the '666 patent have testified that during the concentrated spin wash there is no pooling of wash liquid in the basket. (Hardaway Dep. at 240). The wash liquid in the wash basket would be a minimal amount. (Brenner Dep. at 181-82). Hardaway explained that while a traditional washing employed about 13 parts water to 1 part clothes, the '666 patent was targeting a 1 to 1 ratio. (Hardaway Dep. at 169). The plastering of the clothes to the basket walls was affected not only by the spin speed of the wash basket, but also by the cloth to water ratio. (Hardaway Dep. at 169).

The evidence of record clearly demonstrates that a high water level, while not an express limitation in Claim 13, is relevant to the operation of the invention and to the specific limitation in Step 2 of Claim 13, i.e., that the detergent solution pass through the wash load in an amount in excess of that necessary to saturate the wash load "without mechanically agitating said wash load." It is also clear that a high water level will affect whether the clothes are agitated during the stop, start, and reversal of direction in a vertical axis machine.

Whirlpool does not dispute that the cloth items move relative to each other in the Centrifusion wash. Whirlpool nevertheless contends there is a genuine issue of material fact as to whether this movement of cloth items constitutes mechanical agitation. Whirlpool contends that it is clear that the inventors intended that the mechanical agitation missing from

the second step of Claim 13 is the type of mechanical agitation that would ordinarily be applied to a wash load during an agitate wash cycle in a vertical axis washer (e.g., that is applied to the clothes by an agitator or impeller). In support of this contention they cite Hardaway's testimony that in a vertical axis machine mechanical agitation is provided by an agitator or an impeller, and in a horizontal machine mechanical agitation is provided by vanes or baffles that lift the cloth items up. (Hardaway Dep. at 268). Hardaway acknowledged that when a vertical washer is stopped, the clothes may or may not fall to the bottom. He testified that one time falling of clothes in a vertical washer was not sufficient to constitute mechanical agitation, and instead there would have to be substantial tumbling. (Pl. Ex. 12, Hardaway Dep. at 50).

Hardaway's testimony is of little relevance to the infringement analysis. First, it is geared toward general principles of mechanical agitation and does not address the term in conjunction with the '666 patent's use of the term or in conjunction with this Court's construction of the term as moving the cloth items to and fro. Neither the claims nor the patent discuss "degrees" of mechanical agitation or the amount of to and fro movement that is required for there to be agitation. The '666 patent says "**no mechanical agitation** is applied to the clothes" and the clothes "**do not move** relative to each other." '666 patent, col. 2, ll 29-33. (emphasis added). It does not say there is not too much agitation, or that the clothes do not move very much. Second, Hardaway's testimony is not directed at the operation of Harmony's Centrifusion wash. His discussion of one time falling of cloth items

does not mirror what occurs in Harmony's Centrifusion wash. During the Centrifusion wash there is repeated stopping and starting and a succession of cloth movements outward and inward. Moreover, Hardaway did not testify about the actions of cloth items in a vertical washer where there is a substantial amount of water to move the cloth items.

Whirlpool also contends that GE has admitted that the Centrifusion Wash cycle operates without agitation. In support of this assertion Whirlpool points to GE advertising and sales literature which note that the Harmony cleans "without agitation" or "without mechanized agitation." (Ex. 9, website video still; Ex. 4, sales brochure at 6; Ex. 10, product brochure at 6). Brian Brislin of GE testified that the marketing intent of the "without agitation" language was to highlight the fact that the Harmony does not have a traditional agitator. (Brislin Dep. at 82-83, 89). Whirlpool points out that Brislin could not explain why GE used the phrase "without agitation" rather than the phrase "without a traditional agitator," which it had used on other occasions. (Brislin Dep. at 90).

The phrase "without agitation" is used interchangeably by GE along with such phrases as "very different from conventional agitation action." (Ex. 4, sales brochure at 6). The shorthand reference used for advertising purposes is not an admission that there is no agitation as that term has been specifically used and construed in the '666 patent. The literature Whirlpool points to cannot be understood to be an admission by GE that the clothes do not move to and fro. Moreover, it is the washer, not the marketing materials, that are the

subject of the infringement accusation. The marketing materials cannot override the actual operation of the Harmony.

All of the experts agree on how the Harmony functions during Centrifusion. The video evidence presented conforms with the experts' descriptions of the quantity of water in the machine and demonstrates clearly that the cloth items move toward the walls during acceleration and away from the wall during deceleration. There is ample water in the basket when the basket accelerates, decelerates, and reverses directions. Because there is so much water, the cloth items are moved to and fro and are moved relative to each other. There is no question of fact that the operation of Harmony's Centrifusion wash results in mechanical agitation of the cloth items. Harmony's Centrifusion wash provides periods of mechanical agitation by systematic accelerations, decelerations, interruptions to spin speed and reversals, together with observable free liquid that facilitates the movement of the cloth items relative to each other. As a result, the Harmony does not meet the "without mechanical agitation" limitation of Claim 13.

B. Continuous

The Court's second consideration is whether Harmony's Centrifusion wash meets the limitation in Claim 13, step 2, of "passing an amount . . . in excess of that necessary to saturate the wash load." This Court has construed this phrase to mean "continuously" passing a concentrated detergent solution so that the total amount passed through would be greater than the amount necessary to saturate the wash load.

Whirlpool's expert, Dr. Caligiuri, determined that during the Centrifusion wash, the Harmony passes an amount of detergent solution through the wash load that is greater than the amount necessary to saturate the wash load. (Pl Ex. 7, Caligiuri Rpt. at 63). In making this determination Dr. Caligiuri measured the amount of liquid that passed into the annulus during one 30-second cycle of the Centrifusion wash and multiplied it by four.

The Court agrees with Defendants that because there is agitation of the clothes at the beginning and end of each of the four thirty-second segments of the Centrifusion cycle, the Harmony does not meet the requirement that the detergent pass through the cloth items continuously without agitation. Furthermore, even if there were no agitation, there would be no "continuous" passing through because the basket slows down between cycles and stops the centrifugal forcing of the detergent solution through the cloth items.

In response Whirlpool notes that the '666 patent does not speak to the direction of the detergent solution passing through the wash load. Whirlpool contends it makes no difference if the detergent solution is passing from the basket, through the cloth items, into the annulus, or whether the water is returning from the annulus, through the cloth items, back into the basket. Accordingly, Whirlpool contends there is a question of fact as to whether the Harmony "continuously" passes solution through the wash load in the necessary amount.

Whirlpool's argument assumes that the detergent solution that flows back to the center of the wash basket as the centrifugal force dissipates is flowing through the cloth items and not merely over or around them. There is no evidence to support this assumption. Although

Defendants' expert agreed that it was possible that some of the detergent solution from the annulus passed through the cloth items during deceleration, he had no idea how much. (Sundell Dep. at 456). Whirlpool's expert did consider or measure the amount of detergent solution that passed through the cloth items during deceleration. In fact, to determine the total amount of detergent solution that is passed through the clothes during the Centrifusion wash, Dr. Caligiuri only measured the amount of detergent solution that flowed into the annulus during acceleration, and not the detergent solution that flowed back into the machine during deceleration. (Pl. Ex. 7, Caligiuri Rpt. at 59 & 62).

C. Passing . . . through

The Court's third consideration is whether Harmony's Centrifusion wash meets the limitation of step 2 of Claim 13 of passing the requisite amount of detergent solution "through the wash load, not merely over or around."

Defendants contend this limitation is not met because Whirlpool's expert altered the operation of the Harmony washer and because Whirlpool cannot show that the requisite amount of detergent solution passes "through" the wash load, as compared to over and around. (Sundell Decl. ¶ 31).

In order to measure the amount of liquid passing through the cloth items Dr. Caligiuri drained fluid during one cycle of the Centrifusion wash. He did not add a drain pump to the washer as alleged by Defendants, but merely added a switch to manually control the washer's

existing drain pump. (Caligiuri Decl. ¶ 7). In other words, he allowed drainage during a step of the wash (Centrifusion) that ordinarily does not allow drainage.

Defendants contend that by draining the solution from the annulus during the 30 second Centrifusion wash cycle, Dr. Caligiuri eliminated the steady state condition that actually exists during use that prevents the water from flowing through the clothes. (Sundell Decl. ¶ 30). Defendants contend that because Dr. Caligiuri's testing of the Harmony did not simulate normal operating conditions, it is not reliable and is not probative to a showing of infringement. Testing of accused products that do not simulate normal operating conditions are generally not relevant to showing infringement. *Laitram Corp. v. Cambridge Wire Cloth, Co.*, 863 F.2d 855, 859 (Fed. Cir. 1988).

According to Dr. Caligiuri, the volume of annular space between the wash basket and the outer tub of the Harmony is sufficient such that, during maximum spin wash RPM this annular area accommodates an additional amount of detergent solution greater than that necessary to saturate the cloth items. (Pl. Ex. 16, Caligiuri Decl. ¶ 6). He accordingly disagrees with Dr. Sundell's contention that there is a steady state condition blocking flow of detergent solution from the cloth items. (Caligiuri Decl. ¶ 6).

The Court agrees with Whirlpool that there is an issue of fact as to whether or not the draining by Dr. Caligiuri altered the normal operating condition of the Harmony to an extent that would make his measurements unreliable. Nevertheless, the Court agrees with Defendants that Dr. Caligiuri's testing does not show that the Harmony meets the "passing

through" limitation because Dr. Caligiuri failed to measure whether the liquid went through the clothes as opposed to over and around them.

Spin speed is relevant to the ability of the detergent solution to pass the requisite amount of detergent directly through, rather than over and around the cloth items. In the description of the preferred embodiment the '666 patent recommends a high spin speed:

Washability tests have been conducted using 420 RPM and 640 RPM spin speeds during the spin wash step. Little difference in performance was observed. However, Applicants believe that the performance of the spin wash would fall off considerably if a very low spin speed was used. **A low spin speed would greatly reduce the quantity of detergent solution being passing [sic] through the load during a given period of time.** It is also believed that forcing the water through the fabric by centrifugal force causes it to take a relatively direct (radial) path through the fabric, as opposed to following a path of least resistance, which would tend to provide non-uniform wetting.

'666 Patent, col. 5, line 61- col. 6, line 5 (emphasis added).. "[S]pin speeds in the range of 420-640 RPM are desirable in order to cause the detergent solution to quickly and directly pass through the clothes load to be recaptured in the sump area and recirculated and resprayed on to the clothes load." '666 patent, col 6, lines 19-24.

According to Whirlpool, neither of these passages suggest that the claimed invention must be practiced at spin speeds of at least 420 RPM. Whirlpool contends that low speed only means that wash performance will decrease. Although Claim 13 does not suggest a minimum spin speed, one of the inventors of the '666 patent, Anthony H. Hardaway, testified that the '666 invention cannot be practiced at lower speeds. According to the inventor, in order to pass the amount of detergent solution through the wash load in the context of the

'666 patent, the spin speed would have to be 400 RPM at a minimum. (Hardaway Dep. at 311).

The maximum rotational speed of the basket during Harmony's Centrifusion wash cycle varies between 70 RPM and 160 RPM, depending on factors such as the load size and user selections. (Sundell Decl. ¶¶ 14 & 18). Dr. Caligiuri agrees that the speed of the Centrifusion or spin wash is approximately 150 RPM. (Caligiuri Supp. Rpt. at 12). Dr. Caligiuri's report does not indicate the length of time it spins at 150 RPM, nor does he indicate whether the RPM's would be consistent for all wash loads. However, he does not dispute Defendants' evidence that 160 RPM would be the maximum speed for only a portion of the compression wash, and then only for smaller loads. Larger loads will have a lower RPM. (Sundell Decl. ¶ 28).

Dr. Caligiuri did not measure what amount of detergent solution, if any, passed "through" the clothes as opposed to over and around the clothes. He only measured the amount of detergent solution that passed from the wash basket into the annulus. Lower spin speeds affect the ability of the detergent solution to go through the clothes. Based upon the evidence of record, the Court concludes as a matter of law that Whirlpool has failed to present evidence sufficient to satisfy its burden of proving, by a preponderance of the evidence, that the low speed of the Harmony washer during the Centrifusion cycle is sufficient to provide for the passing of wash liquid "through" the clothes, rather than over or around them in an amount that exceeds the total amount necessary to saturate the wash load.

The burden is on Whirlpool to prove that the Harmony washer meets all limitations of the claim. It has not done so.

IV.

Defendants contend that Whirlpool should be precluded asserting that the Harmony infringes the '666 patent under the doctrine of equivalents because Whirlpool has failed to articulate any substantive theory of equivalents infringement in its written discovery responses to contention interrogatories, its expert reports, or its submissions to the Court.

In response to Defendants' argument with respect to the doctrine of equivalents, Whirlpool does not suggest what the factual basis for its claim might be. Whirlpool merely argues that Defendants have presented nothing more than conclusory attorney argument and that infringement under the doctrine of equivalents is a heavily fact-based analysis.

In *Nike Inc. v. Wolverine World Wide, Inc.*, 43 F.3d 644 (Fed. Cir. 1994), the court affirmed the district court's order barring the plaintiff's claim under the doctrine of equivalents where the plaintiff had not disclosed the factual basis for claim during discovery. *Id.* at 648-49. In *Leggett & Platt, Inc. v. Hickory Springs Mfg. Co.*, 285 F.3d 1353 (Fed. Cir. 2002), the case cited by Whirlpool to illustrate that establishing non-infringement under the doctrine of equivalents at the summary judgment stage is extraordinarily difficult, there was evidence in the record to support a finding of equivalence. Here, Whirlpool has given the Court no evidence for review. Whirlpool's effort to preserve an as yet hypothetical claim

under the doctrine of equivalents is not sufficient to withstand entry of summary judgment of non-infringement.

Upon review of the evidence in the light most favorable to Whirlpool, the Court is satisfied that no reasonable jury could find that the Harmony infringes Claim 13 of the '666 patent. Accordingly, Defendants' motion for summary judgment of non-infringement as to the '666 patent will be granted.

In light of the determination that there has been no infringement of the '666 patent, the Court need not address Defendants' alternative motion for summary judgment of invalidity of the '666 patent. That motion will accordingly be denied as moot.

An order consistent with this opinion will be entered.

Date: July 18, 2006

/s/ Robert Holmes Bell
ROBERT HOLMES BELL
CHIEF UNITED STATES DISTRICT JUDGE